



Montana Fish, Wildlife & Parks

May 30, 2014

PO Box 200701
930 Custer Ave W
Helena, MT 59620

Future Fisheries Citizen Panel
PO Box 200701
Helena, MT 59620

Dear Panel Members,

I am writing to submit a Future Fisheries application for a habitat improvement project on the Grunenfelder property on Tenmile Creek just west of Helena. Please find enclosed a Future Fisheries application and supporting materials.

This project was initiated after an irrigation diversion for flood irrigation on the property failed during high flows in 2011. Following discussions with FWP and a consultant, the landowner expressed interest in converting to pumping via electric pump and using wheel lines to irrigate the north pasture. They were also interested in fencing the riparian corridor across the entire parcel.

A portion of this project has been funded to make the conversion from flood irrigation to wheel lines (\$43,500 has been approved by PPL Montana). This request is to fully complete the project by treating 470 feet of eroding stream bank and fencing the riparian area with water gaps for livestock watering.

This portion of the project is expected to benefit fisheries by encouraging growth of riparian vegetation, which in turn provides refuge and protective fish cover, and also moderates stream temperatures during periods with high temperatures and low flow.

Partners in this project include PPL Montana and the Grunenfelder Family Trust. The Lewis & Clark County Water Quality Protection District may also provide assistance with plantings following construction.

Thank you for considering our application.

Sincerely,

Eric Roberts
Helena Area Fish Biologist

**FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION**

(please fill in the highlighted areas)

I. APPLICANT INFORMATION

- A. Applicant Name: Eric Roberts, MDFWP
- B. Mailing Address: PO Box 200701
- C. City: Helena State: MT Zip: 59620
- Telephone: 406-495-3272
- D. Contact Person: Eric Roberts, Helena Area Fish Biologist
- Address if different from Applicant: _____
- City: _____ State: _____ Zip: _____
- Telephone: _____
- E. Landowner and/or Lessee Name
(if other than Applicant): Robert and Susan Hundley
- Mailing Address: 154 Brushwood Drive
- City: Loveland State: OH Zip: 45140
- Telephone: 513-703-6444

II. PROJECT INFORMATION*

- A. Project Name: 7G Irrigation and Riparian Fencing
- River, stream, or lake: Tenmile Creek
- Location: Township 10N Range 4W Section 31, 32
- County: Lewis & Clark
- B. Purpose of Project:
Rebuild a two streambanks that are eroding into pasture, and construct fencing with water gaps on approximately 4,200 feet of Tenmile Creek.
- C. Brief Project Description: _____

This proposal is part of a larger project to convert a gravity feed flood irrigation system to an electric pump and wheel line system (already approved for funding through PPL Montana for \$43,500). There are two areas proposed for stream bank work: 110 feet near the western side of the parcel eroding into the south pasture; and 320 just downstream of a bridge crossing. Both banks are steep, cut banks on areas that have been over-widened due to active erosion. At both sites the banks will be rebuilt with a bankfull bench to appropriate radius of curvature and width:depth ratio for this portion of stream. Banks will be stabilized by juniper revetments, willow plantings, and a minimal amount of rock. Depending on season of construction, a portion of the larger section of bank work could be enhanced using willow soil lifts (willow cuttings must be dormant for this technique to be effective). Fencing will be constructed on both sides of Tenmile Creek, with approximately 1,650 feet constructed on the north side of the stream, and 3,700 feet on the south side. Walk through type water gaps will be constructed at sites indicated on attached map.

D. Length of stream or size of lake that will be treated: 430 feet of streambank, 5,350 feet of fence

E. Project Budget:

Grant Request (Dollars): \$ 36,587.50

Contribution by Applicant (Dollars): \$ In-kind \$
(salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ 4,720 In-kind \$
(attach verification - See page 2 budget template)

Total Project Cost: \$ 41,307.50

F. Attach itemized (line item) budget – see template

G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).

H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Eastern brook trout, brown trout, rainbow trout

B. How will the project protect or enhance wild fish habitat?:

Enhanced vegetation growth in the riparian area will shade the stream, provide refuge for fishes, and improve water quality through decreased bank erosion.

C. Will the project improve fish populations and/or fishing? To what extent?:

The project is expected to improve fish populations by providing additional refuge and protective cover. Additional vegetative cover can also help moderate water temperatures during periods of high temperatures and low flow.

- D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Direct public access is limited on this section of Tenmile Creek, but the stream is accessible via public roadway just upstream of the parcel. This project is expected to increase abundance of wild fish, which should increase fishing opportunity.

- E. If the project requires maintenance, what is your time commitment to this project?:

FWP will monitor the project and address maintenance and repair issues as needed. The close proximity of this project to Helena and Highway 12 will simplify monitoring of the project.

- F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Livestock grazing has denuded much of the stream bank vegetation, especially in the areas of the proposed bank treatments. Fencing the stream should keep livestock out of the stream and allow stream bank vegetation to re-establish. Reestablishing an appropriate width:depth ratio and constructing a bankfull bench at the two eroding sites will provide additional floodplain and reduce the rate of active erosion at the site.

- G. What public benefits will be realized from this project?:

Improved fish refuge and cover habitat following re-establishment of stream bank vegetation should boost growth and recruitment within the fish population. Decreased bank erosion will also improve water quality.

- H. Will the project interfere with water or property rights of adjacent landowners? (explain):

The project is not expected to interfere with adjacent property or water rights. Conversion to pump irrigation via PPL funding is allowed by waiver by DNRC due to flood damage to the original irrigation diversion structure in 2011.

- I. Will the project result in the development of commercial recreational use on the site?: (explain):

No. The landowner is very interested in improving the fishery in Tenmile Creek for future generations, as well as maintaining the agricultural use of the land. Development of commercial recreational use is unlikely.

- J. Is this project associated with the reclamation of past mining activity?:

No.

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:

Date:

Sponsor (if applicable):

***Highlighted boxes will automatically expand.**

Mail To:

**Montana Fish, Wildlife & Parks
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701**

Incomplete or late applications will be returned to applicant.

Applications may be rejected if this form is modified.

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

(Revised 5/30/2014)

WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION*	COST/UNIT	TOTAL COST	CONTRIBUTIONS				
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES	IN-KIND CASH	TOTAL	
Personnel									
Survey	1		\$2,000.00	\$ 2,000.00			2,000.00	\$ 2,000.00	
Design			\$ -	-				\$ -	
Engineering			\$ -	-				\$ -	
Permitting	1		\$400.00	\$ 400.00			400.00	\$ 400.00	
Oversight	1		\$2,000.00	\$ 2,000.00			2,000.00	\$ 2,000.00	
Labor	8 hours		\$40.00	\$ 320.00			320.00	\$ 320.00	
			\$ -	-				\$ -	
Travel									
Mileage			\$ -	-				\$ -	
Per diem			\$ -	-				\$ -	
Construction Materials									
Juniper trees	100 trees		\$2.50	\$ 250.00			250.00	\$ 250.00	
Rock - cobble	20 yd³		\$50.00	\$ 1,000.00			1,000.00	\$ 1,000.00	
Gravel for water gap	30 yd³		\$15.00	\$ 450.00			450.00	\$ 450.00	
Logs	2		\$50.00	\$ 100.00			100.00	\$ 100.00	
Fencing-3 strand electric	5,350 ft		\$2.50	\$ 13,375.00			13,375.00	\$ 13,375.00	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
Equipment									
Truck for Juniper trees	175 miles		\$1.50	\$ 262.50			262.50	\$ 262.50	
Excavator	80 hours		\$150.00	\$ 12,000.00			12,000.00	\$ 12,000.00	
Dump truck	40 hours		\$85.00	\$ 3,400.00			3,400.00	\$ 3,400.00	
Skid steer	50 hours		\$85.00	\$ 4,250.00			4,250.00	\$ 4,250.00	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
Mobilization									
Mobilization	1		\$1,500.00	\$ 1,500.00			1,500.00	\$ 1,500.00	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
			\$ -	-				\$ -	
TOTALS					\$ 41,307.50	\$ 36,587.50	\$ -	\$ 4,720.00	\$ 41,307.50

*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

[illegible]

Tenmile 7G Design Narrative

Tenmile Creek is a perennial stream with headwaters near the Continental Divide and flow approximately 27 miles before the confluence with Prickly Pear Creek, approximately 2.3 miles upstream from Lake Helena. Land use in the upper basin is predominantly timber harvest, and hard rock mining has had substantial impacts to the upper basin. When the stream reaches the valley floor (including the project reach) land use is predominantly irrigated agriculture.

The project reach is approximately 4 miles west of Helena, and located in a transitional area where the stream enters a widened floodplain after leaving the confined reaches of the highlands, but before entering the alluvial fan deposits of the Helena valley. Rosgen classification for this reach is a B3 type channel, which is generally defined as a moderate gradient, moderately entrenched, moderately sinuous channel with a moderate width:depth ratio comprised of cobble-gravel substrate.

Large scale morphometric changes are not proposed as part of this project. This project proposes to use fill to reduce w:d ratio at two heavily eroded banks and construct a bankfull bench at each site to improve floodplain connectivity. For rehabilitation of the two heavily eroded banks, the below calculations were used for design considerations:

W_{bkf} : 23 feet

d_{bkf} : 1.7 feet

Step-pool every 45 – 115 feet

Ten Mile Cr.

AFM

constructed livestock crossing

gravel pad

rock Heyway D50 1.5ft

Plan
View

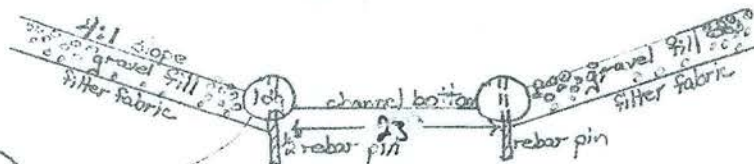
stream flow →

23ft

gravel pad

16ft

cross
section



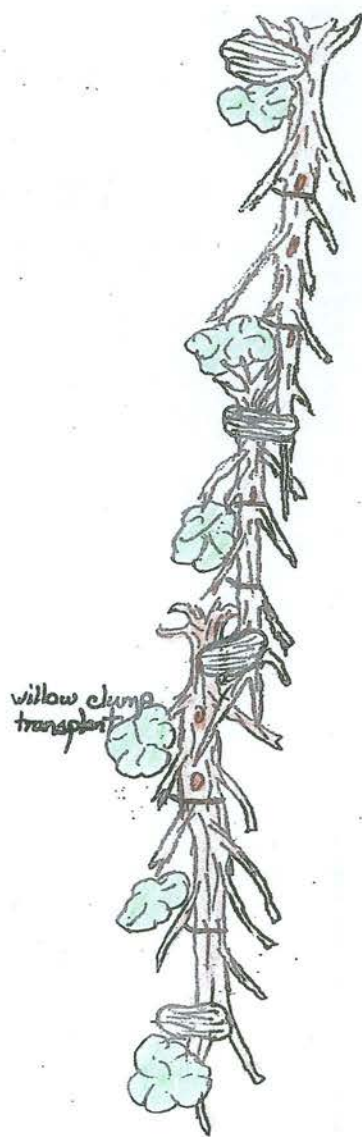
log

← 1.5ft →

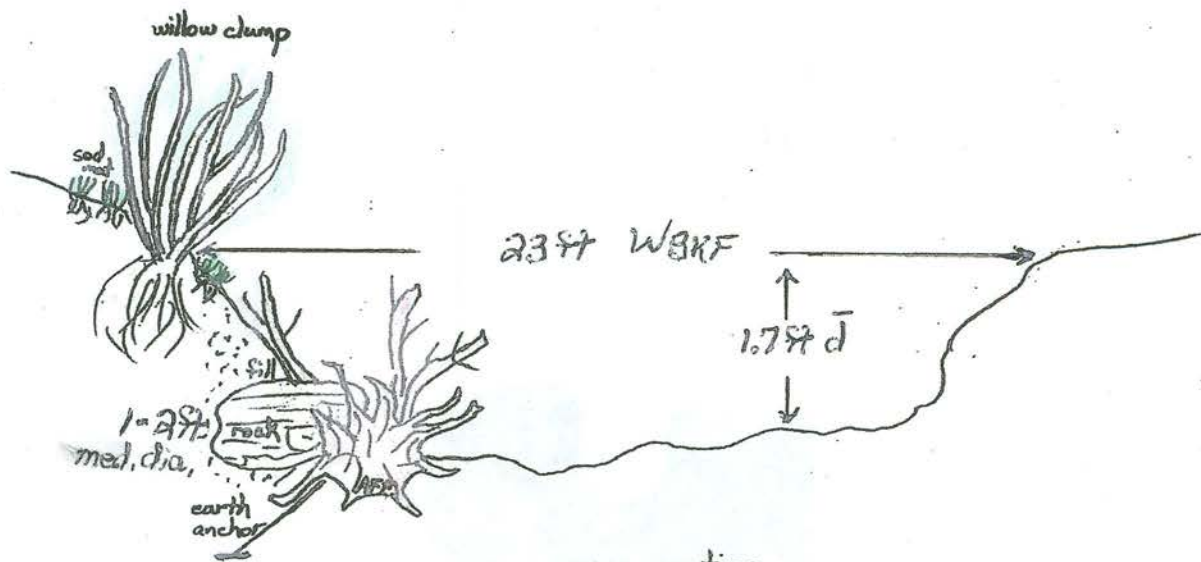
log - minimum diameter

Not to Scale

Juniper Tree ~~Replant~~ Ten Mile Creek



plan view



cross-section



Figure 1: Looking upstream at 320 foot section of eroding streambank. Proposal is to use fill to reduce stream width and construct a bankfull bench.



Figure 2: Another view of 320 foot section of eroding streambank.



Figure 3: Looking upstream at 110 foot of eroding streambank. Proposal is to fill (remove or cover existing pipe) and construct a small bankfull bench.



Figure 4: Looking downstream at 110 foot section of eroding streambank.



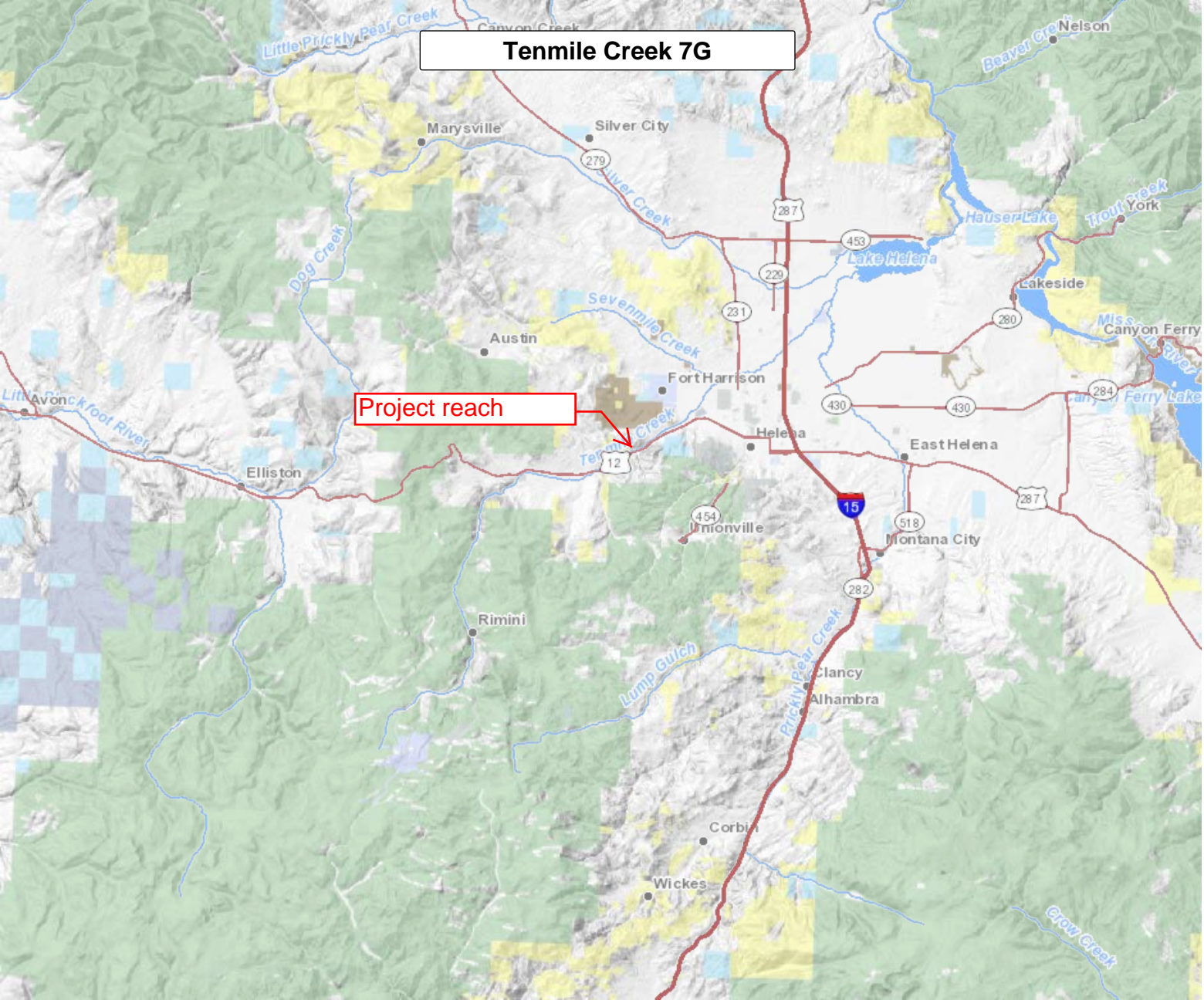
Figure 5: Location of pump site for conversion from flood irrigation to wheel lines (funded by PPL Montana).



Figure 6: Typical sample of substrate in this section of Tenmile Creek.

Tenmile Creek 7G

Project reach



Tenmile Creek 7G



UNITED STATES OF AMERICA

USDI BUREAU OF LAND MANAGEMENT

GOMES ERIC JR & SHERRI ADAMS ILLA M

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BROSNIUS JANET C

WHITE STEPHEN D & DOROTHY Y
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BALDWIN RONALD P & JEANNE M
MC LAUGHLIN JOHN C &
POOLE ANDREW J & GUEDES SANDRA

STEFFENS JOSEPH P & REGINA B

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COLORADO GULCH RD

HELLER LAND & CATTLE CO LLC

U S GOVERNMENT

Tenmile Creek 7G



320' Heavily Eroded Bank

Pump site

110' Heavily Eroded Bank

Water gap

12

COLORADO GULCH RD

Tenmile Creek 7G



Riparian fencing
north pasture

Riparian fencing
south pasture

COLORADO GULCH RD

12